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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,925	03/19/2001	Eric J. Bergman	261/136 P96-0015US2	1111

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LYON & LYON LLP
633 WEST FIFTH STREET
SUITE 4700
LOS ANGELES, CA 90071

EXAMINER
EL ARINI, ZEINAB

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 12/06/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-8

Office Action Summary	Application No.	Applicant(s)	
	09/811,925	BERGMAN, ERIC J.	
	Examiner	Art Unit	
	Zeinab E. EL-Arini	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *16 October 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *92-95 and 97-116* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *92-95 and 97-116* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 98-116 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 98, lines 5, 6, claim 107, line 3, claim 112, line 3, " the surface" lacks antecedent basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 98-101, 104, 107-110, and 112-116 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohmi et al. (5,487,398).

Ohmi et al. teach a method for cleaning a surface as claimed. See col. 6, lines 40-45, col. 8, lines 41-50, col. 10, lines 47-55, col. 9, lines 32-45, and the document in general.

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 98-99, 101, 104, 107-108, 110, 112-113, and 115-116 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuoka. EP 548-596

Matsuoka teaches a method for cleaning substrates, like wafers as claimed. See the abstract, pages 4-6.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 98-101, 104, 107-110, and 112-116 are rejected under 35 U.S.C. 102(b) as being anticipated by Matthews (5,464,480).

Matthews teaches a process for the treatment of semiconductor wafers as claimed. See the abstract, col. 3-10, and the claims.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 112-116 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuka et al. JP 03-208900

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 112-116 are rejected under 35 U.S.C. 102(b) as being anticipated by Wada et al. JP 62-117330

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 105-106, 111 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi et al. In combination with Schellenberger et al. (5,714,203) or Lampert et al.

Ohmi et al. as discussed supra do not teach mixing the ozone with the carrier gas as claimed.

Schellenberger et al. teach a procedure for the drying of silicon. The reference teaches that the gas mixture added over the surface of the hydrofluoric acid solution contains oxygen / ozone, and nitrogen or similar gas can be used as a carrier gas. See col. 3, lines 3-9, lines 25-36, col. 4, lines 10-15, 24-25, and the document in general.

Lampert et al. teach the carrier gas as claimed.

It would have been obvious at the time applicant invented the claimed process to use the carrier gas taught by Schellenberger et al. or Lampert et al. in the Ohmi et al. process to obtain the claimed process. This is because mixing the ozone with the carrier gas is well known in the semiconductor processing art.

7. Claim 95 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi et al. Ohmi et al. as discussed supra do not teach the rotating speed as claimed.

It would have been obvious for one skilled in the art to adjust the rotating speed to obtain optimum results. This is because rotating the wafer during cleaning is well known in the art.

5. Claims 92-95 and 97-106, and 107-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al. or Otsuka et al. in combination with Kajita. JP08-08222

Wada et al. And Otsuka et al. teach all limitation with the exception of the rotating step as claimed.

Kajita teaches the rotating step as claimed. See the abstract and the document in general.

It would have been obvious for one skilled in the art to use the rotating step taught by Kajita in the Wada et al. or Otsuka et al. process to improve the cleaning process. This is also because rotating the wafer during cleaning is well known in the art.

6. Claims 92-95, and 97-116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukazawa in combination with Wada et al. and Kajita.

Fukazawa teaches a method of removing contaminants from the surface of semiconductor wafers. The reference teaches all limitation with the exception of the heating solution, the temperature and the speed of rotation as claimed.

Wada et al as discussed supra teach the heating and the temperature as claimed.

Kajita teaches the rotation as claimed.

It would have been obvious for one skilled in the art to use the heating solution taught by Wada et al. and the rotation taught by Kajita in the Fukazawa process to obtain the claimed process. This is because heating the solution used for cleaning the wafer and rotating the wafer during cleaning are well known in the art.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 97-116 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 09/836,080. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process as claimed in both applications are functionally equivalent.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

1. Claims 92-95 and 97-116 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 7, 9, 14, 15, 22-24, 37, 42, 44-47, 52-53, 56-57, 62, 64, 66, and 73-85 of U.S. Patent No. 6,240,933. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process as claimed is functionally equivalent to the process claimed in Patent No. 6,240,933.

Conclusion

2. Applicant's arguments with respect to claims 92-95 and 97-116 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (703) 308-3320. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7719 for regular communications and (703)305-7719 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Zeinab Elarini

Zeinab E. EL-Arini
Primary Examiner
Art Unit 1746

ZEE
November 29, 2001